

Materials List for:

# Imaging of Intracellular ATP in Organotypic Tissue Slices of the Mouse Brain using the FRET-based Sensor ATeam1.03<sup>YEMK</sup>

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## Materials

| Name                                      | Company                                   | Catalog Number | Comments   |
|---|---|----------------|--|
| 2-deoxyglucose                            | Alfa Aesar                                | L07338         | Non-metabolizable glucose analog                                     |
| 36-IMA-410-019 Argon laser                | Melles Griot                              |                | 488 nm wavelength argon  |
| Ascorbic acid                             | Carl Roth                                 | 3525.1         | Antioxidant, Vitamin C   |
| band pass filters 483/32                  | AHF Analysentechnik AG                    |                | Splitter compatible emission filter                                  |
| band pass filters 542/27                  | AHF Analysentechnik AG                    |                | Splitter compatible emission filter                                  |
| Beamsplitter T 455 LP                     | AHF Analysentechnik AG                    |                | Excitation dichroic mirror   |
| Beamsplitter T 505 LPXR                   | AHF Analysentechnik AG                    |                | Splitter dichroic  |
| Confocal laser scanning microscope C1     | Nikon Microscope Solutions                |                | Modular confocal microscope system C1                                |
| Data processing Origin Pro 9.0.0 (64-bit) | OriginLab corporation                     |                | Scientific graphing and data analysis software                       |
| D-glucose monohydrate                     | Caelo                                     | 2580-1kg       |  |
| DPBS                                      | GIBCO/Life                                | 14190250       | Dulbecco's phosphate-buffered saline                                 |
| Eclipse E 600FN upright microscope        | Nikon Microscope Solutions                |                |  |
| Eclipse FN1 upright microscope            | Nikon Microscope Solutions                |                |  |
| Experimental chamber                      | custom build                              |                | Perfusion chamber for live-cell imaging                              |
| EZ-C1 Silver Version 3.91                 | Nikon Microscope Solutions                |                | Imaging software for confocal microscope                             |
| Hanks' Balanced Salt solution             | Sigma-Aldrich                             | H9394          | With Phenol Red for pH monitoring                                    |
| HERAcell 150                              | Thermo Scientific                         |                | CO <sub>2</sub> incubator HERAcell® 150 with decontamination routine |
| HERAsafe KS/KSP                           | Thermo Scientific                         |                | Safety Cabinet   |
| Horse serum                               | GIBCO/Life                                | 26050088       | Heat inactivated   |
| Huygens Professional                      | SVI Imaging                               |                | Deconvolution software   |
| Image J 1.52i                             | Wayne Rasban national Institute of Health |                | Image processing Software available in the public domain             |
| Insulin                                   | Sigma-Aldrich                             | I6634          | Insulin from bovine pancreas   |
| IP serie peristaltic pump                 | Ismatec                                   |                | High-precision multi-channel pump                                    |
| Layout software, Illustrator CS6          | Adobe                                     |                | Vector graphics editor   |
| L-glutamine                               | GIBCO/Life                                | 25030024       |  |
| Microm HM 650 V                           | Thermo Scientific                         |                | Vibration microtome. Thermo scientific discontinued the              |

|  |                            |           |   |
|--|----------------------------|-----------|---|
|  |                            |           | production of the device in the meantime. Any other slicer or tissue chopper suitable for slicing living tissue is fine, too.   |
| Microscope stage                                   | custom build               |           |   |
| Microsoft Excel 16                                 | Microsoft                  |           | Spreadsheet software for basic data processing  |
| Millicell culture insert                           | Merck Millipore            | PICM0RG50 | Hydrophilized PTFE, pore size 0.4 $\mu$ m   |
| Minimum Essential Medium Eagle                     | Sigma-Aldrich              | M7278     | Synthetic cell culture media  |
| Monochromator Polychrome V                         | Thermo Scientific/FEI      |           | Ultra fast switching monochromator  |
| NaN <sub>3</sub> (Sodium Azide)                    | Sigma-Aldrich              | S-8032    | Mitochondrial inhibitor (complex IV inhibitor). CAUTION: Azide is toxic. Be aware not to accidentally ingest or inhale it, and prevent its absorption through the skin.     |
| Nikon Fluor 40x / 0.80 W DIC M $\infty$ /0 WD 2.0  | Nikon Microscope Solutions |           | Water Immersion Microscope Objective  |
| NIS Elements 4.50 advanced Research                | Nikon Microscope Solutions |           | Imaging software. Upgraded version for FRET imaging   |
| ORCA-Flash4.0                                      | Hamamatsu Photonics        |           | Digital CMOS camera   |
| Perfusion tubing                                   | Pro Liquid GmbH            |           | Tygon tubing, 1.52 x 322 mm (Wd: 0.85)  |
| Photoshop CS 6 Version 13.0                        | Adobe                      |           | Image processing software   |
| Sodium L-lactate                                   | Sigma-Aldrich              | 71718-10G |   |
| ssAAV-2/2-hSyn1-ATeam1.03YEMK-WPRE-hGHp(A)         | ETH Zürich                 | v244      | Single-stranded AAV vector that induces the expression of ATeam1.03 <sup>YEMK</sup> under the control of the human synapsin 1 promoter fragment hSyn1.                      |
| ssAAV-5/2-hGFAP-hHBbl/E-ATeam1.03YEMK-WPRE-bGHp(A) | ETH Zürich                 | v307      | Single-stranded AAV vector that induces the expression of ATeam1.03 <sup>YEMK</sup> under the control of the human glial fibrillary acidic protein promoter fragment ABC1D. |
| WVIEW GEMINI optic system                          | Hamamatsu Photonics        |           | Emission Image Splitter   |